

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fabrication method of a liquid crystal display device, comprising:

providing a substrate;

forming a gate photoresist pattern on the substrate by a first roller printing process;

~~providing a thermal transfer injection nozzle including a resist storing layer for storing an injected resist, a thin film resistor for heating a thin deposited resist electrically, a vapor heated by the thin film resistor, and an injection hole plate including an injection hole that injects a resist;~~

forming a gate line on the substrate by applying ~~a gate~~the gate photoresist pattern formed by the first roller printing process~~using the thermal transfer injection nozzle;~~

removing the gate photoresist pattern;

sequentially forming a gate insulating layer, a semiconductor layer, and a high-concentrated N⁺ layer over the substrate and the gate line;

forming an active photoresist pattern on the high-concentrated N⁺ layer by a second roller printing process;

forming an active region including the high-concentrated N⁺ layer by applying an active photoresist pattern by the second roller printing process~~printing~~, wherein the active region is formed by sequentially removing the high-concentrated N⁺ layer and the semiconductor layer using the active photoresist pattern formed by the second roller printing process ~~printing~~-as a mask;

removing the active photoresist pattern;

forming a conductive layer over the active region and the gate insulating layer;

depositing a photoresist layer over the conductive layer;

applying a mask over the photoresist layer, and performing a lithography process, to form a photoresist layer pattern;

removing the conductive layer by using the photoresist layer pattern as a mask to form source and drain electrodes;

removing the high-concentrated N⁺ layer above a channel region by using the photoresist layer pattern as a mask;

removing the photoresist layer pattern;

forming a passivation layer over the substrate and the source and drain electrodes;

forming a contact hole photoresist pattern over the passivation layer by a third roller printing process ~~using the thermal transfer injection nozzle~~;

removing the passivation layer by using the contact hole photoresist pattern as a mask to form a contact hole;

removing the contact hole photoresist pattern;

forming a pixel electrode layer over the passivation layer and the contact hole;

forming a pixel electrode photoresist pattern over the pixel electrode layer by a fourth roller printing process ~~using the thermal transfer injection nozzle~~; and

removing the pixel electrode layer by using the pixel electrode photoresist pattern as a mask to form a pixel electrode,

wherein each of the first to fourth roller printing processes comprises,

providing a cliché having an intaglio pattern of a groove form;

depositing a predetermining amount of photoresist on the cliché;

rotating a roller on the cliché to transfer the photoresist contained in the cliché onto a surface the roller; and

rotating the roller on the substrate to re-transfer the photoresist contained in the roller onto the substrate thereby forming a photoresist pattern on the substrate.

2-14. (Canceled).

15. (Previously Presented) The method of claim 1, wherein the mask applied over the photoresist layer in the step of applying the mask is the only mask applied through out the method of claim 1.

16-23. (Canceled)

24. (Currently Amended) A fabrication method of a liquid crystal display device, comprising:

forming a gate line on a substrate by applying a gate photoresist pattern formed by a roller printing process,

wherein the roller printing process includes:

providing a cliché on which a resist is deposited,

contacting a roller with the cliché in which the resist is contained,

rotating a roller on the cliché, to transfer the resist contained in the cliché onto a surface of the roller, and

contacting the roller with the substrate and rotating on the substrate to re-transfer the resist onto the surface of the roller;

sequentially forming a gate insulating layer, a semiconductor layer, a high-concentrated N⁺ layer and a conductive layer over the substrate including the gate line;

forming an active region including the high-concentrated N⁺ layer by applying an active photoresist pattern formed by the roller printing process, wherein the active region is formed by sequentially removing the high-concentrated N⁺ layer and the semiconductor layer using the active photoresist pattern as a mask;

~~exposing a part of the active photoresist pattern on a channel region by using a mask for controlling an optical amount and removing the exposed active photoresist pattern on a channel region to form a stepped active photoresist pattern, wherein a degree of the removed active photoresist pattern is different at time of development according to a degree of exposure to light;~~

~~patterning the conductive layer, the high concentrated N⁺ layer and the semiconductor layer by using the stepped active photoresist pattern as a mask;~~

~~ashing a part of the stepped active photoresist pattern to remove the active photoresist pattern on the channel region;~~

forming a conductive layer over the substrate including the high-concentrated N⁺ layer and the semiconductor layer;

forming a photoresist layer on the conductive layer;

patterning the photoresist layer by performing a lithography process to form a photoresist layer pattern;

removing the conductive layer and the high-concentrated N⁺ layer on the channel region by the photoresist layer pattern as a mask to form source and drain electrodes electrically separated from each other;

removing the active photoresist layer pattern;

forming a passivation layer over the ~~source/drain electrodes~~ source and drain electrodes;

forming a contact hole in the passivation layer by applying a contact hole photoresist pattern formed by the roller printing process; and

forming a pixel electrode on the passivation layer by applying a pixel electrode photoresist pattern formed by the roller printing process.